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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/523,065	03/10/2000	Cecilia Galarza	001340.P021	4465

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EXAMINER	
CRAIG, DWIN M	

ART UNIT	PAPER NUMBER
2123	5

DATE MAILED: 06/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/523,065	GALARZA ET AL.	
	Examiner	Art Unit	
	Dwin M Craig	2123	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10 March 2000*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-137* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *See Continuation Sheet* is/are rejected.

7)☒ Claim(s) *See Continuation Sheet* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *10 March 2000* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 2.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Continuation of Disposition of Claims: Claims rejected are 1-3,6-8,12,16,17,22,23,27-29,33,37,38,43,44,48-50,54,58,59,64,65,73-75,85,95-99,102,104,105,109,111-120,122,124-127 and 129-137.
Continuation of Disposition of Claims: Claims objected to are 4,5,9-11,13-15,18-21,24-26,30-32,34-36,39-42,45-47,51-53,55-57,60-63,66-72,76-94,100,101,103,106-108,110,121,123 and 128.

DETAILED ACTION

1. Claims 1-137 have been presented for examination.

Drawings

2. This application has been filed with informal drawings, which are acceptable for examination purposes only. Formal Drawings will be required when the application is allowed.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

3. Independent **Claims 99, 111, 119, 133, 134, 135 and 137** are rejected under **35 U.S.C. 101** because the claimed invention is not claimed to have a useful, concrete or tangible result, and could be interpreted to be a mathematical algorithm.

Unlike Independent Claims 1, 22 and 43 where the Applicant is claiming a, *method of verifying accuracy of said point model,* Independent Claims 99, 111, 119, 133, 134, 135 and 137 do not claim any useful, concrete or tangible result and are therefore not directed towards any statutory subject matter.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Independent **Claims 111 and 134** and dependent **Claims 113 and 118** are rejected under **35 U.S.C. 102(b)** as being clearly anticipated by **"Convergence Analysis of Parametric Identification Methods"** by Lennart Ljung *hereafter referred to as the Ljung-2 reference.*

4.1 As regards independent **Claims 111 and 134** the *Ljung-2* reference teaches a method for performing an identification experiment on a system **(page 771,** *under section II. "Basic Concepts" A. The Data (The System Ş and The Experimental Condition χ* and **Page 772),** generating at least one reference signal value for input into said system **(Figure 1 page 771** *v(t)* going into the top of the SYSTEM block**),** performing a plurality of identification experiments on at least one reference signal value **(page 772),** and obtaining a plurality of input signal values and a plurality of output signal values from the identification experiment **(Page 774** *"C. The Identification Criterion"* and sections of **page 775).**

4.2 As regards dependent **Claims 113 and 118** the *Ljung-2* reference discloses model parameters **(page 774,** *parameterization* and **pages 778-779** *see section, V. Identification As System Approximation***)** and identification experiments performed in an iterative fashion **(page 772).**

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. Independent **Claims 1, 22, 43 and 64** and dependent **Claims 6-8, 12, 16, 17, 27-29, 33, 37, 38, 48-50, 58, 59, 73, 74, 95, 96, 97 and 98** are rejected under **35 U.S.C. 103(a)** as being unpatentable over **"An Intelligent Tool for System Identification"** by Peter A.J. Nagy and Lennart Ljung, *here after referred to as the Nagy et al. reference* in view of **"Issues in System Identification"** by Lennart Ljung, *hereafter referred to as the Ljung reference,* and in further view of **"Hierarchical Simulation of High Speed Digital Interconnects Using a Package Simulator"** by Mark S. Basel, Michael B. Steer and Paul D. Franzon, *here after referred to as the Basel et al. reference.*

5.1 As regards independent **Claims 1, 22, 43 and 64** the *Nagy et al.* reference discloses, selecting a model structure **(page 58)**, performing system identification on said model structure on a plurality of output signals **(pages 60-62),** and verification/validation of the model **(page 58).**

However, the *Nagy et al.* reference does not expressly disclose:

- Generating an input reference signal to the system.
- Using a point model.

An artisan of ordinary skill, wanting to perform system identification, would have been motivated to determine what issues regarding this methodology of model validation would be required for successful system identification. In the same art as system identification the *Ljung* reference discloses a reference signal for input to a system **(page 26).**

Thus, it would have been obvious, to one of an ordinary skill in the art, at the time the invention was made, to have combined the system identification methods of the *Nagy et al.* reference with the system identification methods of the *Ljung* reference because, some systems will have inputs that need to be properly chosen and the proper parameterization is done **(*Ljung* page 27).**

In the related art of electronic simulation, the *Basel et al.* reference discloses the use of point modeling **(page 81).**

It would have been obvious, to one of ordinary skill in the art, at the time the invention was made, to have combined the system identification methods of the *Nagy et al.* reference with the point model methods of the *Basel et al.* reference because, a point modeling method provides the advantage of higher speed in a simulation without having to sacrifice modeling the detail required to properly extract the needed information for the simulation **(Basel et al. page 81 ABSTRACT).**

5.2 As regards dependent **Claims 6, 27, 48, 73 and 74** the *Nagy et al.* reference does not expressly discloses linear and nonlinear systems.

The Ljung reference discloses linear and non-linear systems **(page 27 middle paragraph).**

It would have been obvious, to one of an ordinary skill in the art, at the time the invention was made, to have combined the system identification methods of the *Nagy et al.* reference with the system identification methods of the *Ljung* reference because, certain systems that are modeled have portions that are linear and some sections that are non-linear and in order to properly model systems that have both conditions the *"black box"* methods disclosed in the *Ljung* reference are required **(page 27).**

5.3 As regards dependent **Claims 7, 29 and 49** the *Nagy et al.* reference discloses input/output tables **(page 61).**

5.4 As regards dependent **Claims 8, 29 and 50** the *Nagy et al.* reference discloses ARX, OE, ARMAX, PEM and Box Jenkins models **(page 60).**

5.5 As regards dependent **Claims 12, 33 and 54** the *Nagy et al.* reference discloses outliers **(page 61).**

5.6 As regards dependent **Claim 95** the *Nagy et al.* reference teaches identification **(pages 60-62).**

5.7 As regards dependent **Claims 16, 17, 37, 38, 58, 59 and 96** the *Nagy et al.* reference does not expressly disclose disturbance.

The *Ljung* reference discloses disturbance **(page 26).**

It would have been obvious, to one of ordinary skill in the art, at the time the invention was made, to have combined the system identification teachings of the *Nagy et al.* reference with the system identification teachings of the *Ljung* reference because the model tylor made model structures provided in the *Nagy et al.* reference provide methods of dealing with

proper modeling of noise effects on the inputs to the modeled system that may cause the data to diverge from a proper solution **(pages 26-27 *Ljung*).**

5.8 As regards dependent **Claim 97** the *Nagy et al.* reference teaches input/output models that are unstable **(page 62).**

5.9 As regards dependent **Claim 98** the *Nagy et al.* reference discloses ARX, OE, ARMAX, PEM and Box Jenkins models **(page 60).**

6. Dependent **Claims 2, 3, 23, 44, 65 and 75** are rejected under **35 U.S.C. 103(a)** as being unpatentable over **"An Intelligent Tool for System Identification"** by Peter A.J. Nagy and Lennart Ljung, *here after referred to as the Nagy et al. reference* in view of **"Issues in System Identification"** by Lennart Ljung, *hereafter referred to as the Ljung reference,* and in further view of **"Hierarchical Simulation of High Speed Digital Interconnects Using a Package Simulator"** by Mark S. Basel, Michael B. Steer and Paul D. Franzon, *here after referred to as the Basel et al. reference* and in further view of **Puthenpura et al. U.S. Patent 5,115,391**.

6.1 As regards independent **Claims 1, 22, 43 and 64** see paragraph **5.1** above.

6.2 As regards dependent **Claims 2, 23, 44 and 65** the *Nagy et al.* reference does not expressly teach a *"cost vector"*.

The *Puthenpura et al.* reference discloses a *"cost vector"* **(Col. 9 Lines 30-40, Col. 10 Lines 1-3).**

It would have been obvious, to one of ordinary skill in the art, at the time the invention was made, to have combined the system identification teachings of the *Nagy et al.* reference with the *Kalman Filter/ Affine systems* teachings of the *Puthenpura et al.* reference

because, a cost vector can be used in a linear-time invariant system model, *like a Kalman filter*, to bias the resultant solution to an iterative calculation into a specific direction in order to generate a new prediction, which allows for the filter to move towards a predictive solution faster, **(*Puthenpura et al.* reference Col. 9 Lines 25-30).**

6.3 As regards dependent **Claim 75,** the *Nagy et al.* reference discloses ARX, OE, ARMAX, PEM and Box Jenkins models **(page 60).**

6.4 As regards dependent **Claim 3** the *Nagy et al.* reference discloses parameters **(page 60** *Section 3.Data presentation:***).**

7. Independent **Claims 99 and 133** and dependent **Claims 102, 104, 105 and 109** are rejected under **35 U.S.C. 103(a)** as being unpatentable over **"Convergence Analysis of Parametric Identification Methods"** by Lennart Ljung *hereafter referred to as the Ljung-2 reference,* in view of **Puthenpura et al. U.S. Patent 5,115,391.**

7.1 As regards independent **Claims 99 and 133** the *Ljung-2* reference discloses qualification of a system by validating a model structure from a plurality of model structures **(pages 778 and 779 section V., Identification As System Approximation),** selecting one model structure based on a criteria **(pages 772-774 B. The Set of Models),** and selecting a model order based on the model structure **(page 772** the paragraph beginning with the sentence, "Clearly, the choice of model set cannot be made entirely a *priori.*"**).**

However the *Ljung-2* reference does not expressly disclose a *"cost vector"*.

The *Ljung-2* reference does disclose that when qualifying sets of models the familiar Kalman filter is known in the art and provides a well known method of modeling linear time-

invariant methods of behavior prediction **(page 773,** second paragraph down in the right hand column). An artisan of ordinary skill would have been motivated to search the related Kalman filter art to find suitable methods of selecting models for use in system identification. In the Kalman filter art, the *Puthenpura et al.* reference teaches the use of cost vectors **(Col. 9 Lines 25-40, Col. 10 Lines 1-4).**

Thus, it would have obvious, to one of ordinary skill in the art, at the time the invention was made, to have combined the system identification methods of the *Ljung-2* reference with the Kalman filter methods of the *Puthenpura et al.* reference because a cost vector can be used in a linear-time invariant system model, *like a Kalman filter*, to bias the resultant solution to an iterative calculation into a specific direction in order to generate a new prediction, which allows for the filter to move towards a predictive solution faster, **(*Puthenpura et al.* reference Col. 9 Lines 25-30).**

7.2 As regards dependent **Claim 102** the *Ljung-2* reference does disclose user selecting a model **(page 772** *"B. The Sets of Models" and the paragraph that follows***).**

7.3 As regards dependent **Claim 104** the *Ljung-2* reference teaches a model parameter **(***top of page 774, right hand side***).**

7.4 As regards dependent **Claim 105** the *Ljung-2* reference teaches, *identification experiments,* **(page 771,** *under section II. "Basic Concepts" A. The Data (The System Ş and The Experimental Condition χ* and **Page 772).**

7.5 As regards dependent **Claim 109** the *Ljung-2* reference discloses ARMAX **(page 774).**

8. Dependent **Claims 112, 114-117** are rejected under **35 U.S.C. 103(a)** as being unpatentable over **"Convergence Analysis of Parametric Identification Methods"** by Lennart Ljung *hereafter referred to as the Ljung-2 reference,* in view of **Chen et al. U.S. Patent 5,426,618**.

8.1 As regards Independent **Claim 111** see paragraph 4.1 above.

8.2 As regards dependent **Claims 112 and 116** the *Ljung-2* reference does not expressly disclose a storage device.

The *Chen et al.* reference discloses a storage device **(Figure 4 item 44).**

It would have been obvious, to one of ordinary skill in the art, to have combined the system identification methods of the *Ljung-2* reference with the SNR Data Acquisition methods of the *Chen et al.* reference because, by storing the input signals and the output signals the resulting identification experiments can be reviewed and played back to analyze the result.

8.3 As regards dependent **Claim 114** the *Ljung-2* reference does not expressly discloses signal to noise ratio.

The *Chen et al.* reference discloses signal to noise ratio **(Col. 4 Lines 28-37).**

It would have been obvious, to one of ordinary skill in the art, at the time the invention was made, to have combined the system identification methods of the *Ljung-2* reference with the SNR methods of the *Chen et al.* reference because by improving the SNR of an incoming signal more valid information can be obtained from a signal as opposed to an input signal which has a poor SNR.

8.4 As regards dependent **Claim 115** the *Ljung-2* reference does not expressly disclose *chirp signals, pseudo random binary sequences or wavelets.*

The *Chen et al.* reference discloses *chirp signals* ***(figure 2, Col. 5 Liens 60-68, Col. 6 Lines 1-31),*** *pseudo random binary sequences* ***(Figures 5a, 5f, 5g and 5h)*** *and wavelets* ***(Col. 10 Lines 3-22).***

It would have been obvious, to one of ordinary skill in the art, at the time the invention was made, to have combined the system identification methods of the *Ljung-2* reference with the SNR methods of the *Chen et al.* reference because by improving the SNR of an incoming signal more valid information can be obtained from a signal as opposed to an input signal which has a poor SNR.

8.5 As regards dependent **Claim 117** the *Ljung-2* reference does not expressly disclose the processing of an input reference signal using storage devices.

The *Chen et al.* reference discloses processing an input reference signal using storage devices **(Figure 4).**

It would have been obvious, to one of ordinary skill in the art, at the time the invention was made, to have combined the system identification methods of the *Ljung-2* reference with the SNR methods of the *Chen et al.* reference because by improving the SNR of an incoming signal more valid information can be obtained from a signal as opposed to an input signal which has a poor SNR.

9. Independent **Claims 119 and 135** and dependent **Claims 120, 122 and 124-126** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Chen et al. U.S. Patent 5,426,618** in view of **"An Intelligent Tool for System Identification"** by Peter A.J. Nagy and Lennart Ljung, *here after referred to as the Nagy et al. reference.*

9.1 As regards independent **Claims 119 and 135** and dependent **Claim 120** the *Chen et al.* reference teaches filters and signals **(Figures 1-a thru 1-d).**

However, the *Chen et al.* reference does not expressly disclose outliers.

The *Nagy et al.* reference discloses outliers **(page 61).**

It would have been obvious, to one of ordinary skill in the art, at the time the invention was made, to have combined the filter method of the *Chen et al.* reference with the outlier methods of the *Nagy et al.* reference because, the *Nagy et al.* reference provides a useful method for solving problems where numerical analysis is involved, as in the case of the system as disclosed in the *Chen et al.* reference **(Conclusion, page 62 *Nagy et al.*).**

9.2 As regards dependent **Claim 122** the *Chen et al.* reference discloses a plurality of time values **(Figures 5-a thru 5-i).**

9.3 As regards dependent **Claims 124 and 125** the *Chen et al.* reference discloses an output to a user and an automatic comparison by a processing unit **(Figure 4 item 58).**

9.4 As regards dependent **Claim 126** the *Chen et al.* reference discloses multiple input signals **(Figure 4 items 42x and Second clock).**

10. Independent **Claims 127, 129 and 132** are rejected under 35 U.S.C. 103(a) as being unpatentable over **"Convergence Analysis of Parametric Identification Methods"** by Lennart Ljung *hereafter referred to as the Ljung-2 reference* in view of **"Hierarchical Simulation of High Speed Digital Interconnects Using a Package Simulator"** by Mark S. Basel, Michael B. Steer and Paul D. Franzon, *here after referred to as the Basel et al. reference.*

10.1 As regards independent **Claims 127, 129 and 132** the *Ljung-2* reference discloses generating at least one reference signal for input to a system **(Figure 1 page 771),** obtaining a plurality of input signals and a plurality of output signals from at least one identification experiment **(page 772),** and analyzing and validating signals and models **(pages 778-780** V. Identification as System Approximation**).**

The *Ljung* reference does not expressly disclose point models, *although it does disclose sample points in a model (page 771).*

In the related art of electronic simulation, the *Basel et al.* reference discloses the use of point modeling **(page 81).**

It would have been obvious, to one of ordinary skill in the art, at the time the invention was made, to have combined the system identification methods of the *Nagy et al.* reference with the point model methods of the *Basel et al.* reference because, a point modeling method provides the advantage of higher speed in a simulation without having to sacrifice modeling the detail required to properly extract the needed information for the simulation **(Basel et al. page 81 ABSTRACT).**

11. Dependent **Claims 130 and 131** are rejected under 35 U.S.C. 103(a) as being unpatentable over **"Convergence Analysis of Parametric Identification Methods"** by Lennart Ljung *hereafter referred to as the Ljung-2 reference* in view of **"Hierarchical Simulation of High Speed Digital Interconnects Using a Package Simulator"** by Mark S. Basel, Michael B. Steer and Paul D. Franzon, *here after referred to as the Basel et al. reference* and in further view of **"Issues in System Identification"** by Lennart Ljung, *hereafter referred to as the Ljung reference.*

11.1 As regards independent **Claim 129** see paragraph 10.1 above.

11.2 As regards dependent **Claim 130** the *Ljung-2* reference discloses transfer functions **(page 771),** however it does not expressly disclose disturbance.

The *Ljung* reference discloses disturbance **(page 26).**

It would have been obvious, to one of ordinary skill in the art, at the time the invention was made to have combined the system identification methods of the *Ljung-2* reference with the system identification methods of the *Ljung* reference because, an artisan would have wanted to validate the model to be certain that any solution being derived would converge to an actual solution.

11.3 As regards dependent **Claim 131** the *Ljung-2* reference discloses auto-regression methods **(page 774).**

12. Independent **Claims 136 and 137** are rejected under 35 U.S.C. 103(a) as being unpatentable over **"Convergence Analysis of Parametric Identification Methods"** by Lennart Ljung *hereafter referred to as the Ljung-2 reference* in view of **"Hierarchical Simulation of High Speed Digital Interconnects Using a Package Simulator"** by Mark S. Basel, Michael B. Steer and Paul D. Franzon, *here after referred to as the Basel et al. reference* and in further view of **"Issues in System Identification"** by Lennart Ljung, *hereafter referred to as the Ljung reference.*

12.1 As regards independent **Claims 136 and 137** the *Ljung-2* reference discloses generating at least one reference signal for input to a system **(Figure 1 page 771),** obtaining a plurality of input signals and a plurality of output signals from at least one identification

experiment **(page 772),** and analyzing and validating signals and models **(pages 778-780** V. Identification as System Approximation**).**

The *Ljung* reference does not expressly disclose point models, *although it does disclose sample points in a model (page 771).*

In the related art of electronic simulation, the *Basel et al.* reference discloses the use of point modeling **(page 81).**

It would have been obvious, to one of ordinary skill in the art, at the time the invention was made, to have combined the system identification methods of the *Nagy et al.* reference with the point model methods of the *Basel et al.* reference because, a point modeling method provides the advantage of higher speed in a simulation without having to sacrifice modeling the detail required to properly extract the needed information for the simulation **(Basel et al. page 81 ABSTRACT).**

The *Ljung-2* reference does not expressly disclose disturbance.

The *Ljung* reference discloses disturbance **(page 26).**

It would have been obvious, to one of ordinary skill in the art, at the time the invention was made to have combined the system identification methods of the *Ljung-2* reference with the system identification methods of the *Ljung* reference because, an artisan would have wanted to validate the model to be certain that any solution being derived would converge to an actual solution.

Allowable Subject Matter

13. **Claims 4, 5, 9-11, 13-15, 18-21, 24-26, 30-32, 34-36, 39-42, 45-47, 51-53, 55-57, 60-63, 66-72, 76-94, 100, 101, 103, 106-108, 110, 121, 123 and 128** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

14. **Claims 1-137** have been presented for examination. **Claims 1, 2, 3, 6, 7, 8, 12, 16, 17, 22, 23, 27, 28, 29, 33, 37, 38, 43, 44, 48, 49, 50, 54, 58, 59, 64, 65, 73, 74, 75, 85, 95, 96, 97, 98, 99, 102, 104, 105, 109, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 122, 124, 125, 126, 127, 129, 130, 131, 132, 133, 134, 135, 136 and 137** have been rejected. **Claims 4, 5, 9-11, 13-15, 18-21, 24-26, 30-32, 34-36, 39-42, 45-47, 51-53, 55-57, 60-63, 66-72, 76-94, 100, 101, 103, 106-108, 110, 121, 123 and 128** have been objected to. This action is **NON-FINAL.**

14.1 Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dwin M Craig whose telephone number is 703 305-7150. The examiner can normally be reached on 10:00 - 6:00 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kevin Teska can be reached on 703 305-9704. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DMC